

E1
cont'd
and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content;

selfing the first plant or crossing the first plant with a second plant, thereby producing a plurality of seeds; and

selecting seed with altered mass or oil content.

E2
24. A seed comprising a recombinant expression cassette containing an *ADC* nucleic acid, which *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105, SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content, with the proviso that the seed is not from *Arabidopsis*.

E3
35. A transgenic plant comprising an expression cassette containing a plant promoter operably linked to a heterologous *ADC* nucleic acid, wherein the *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105, SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content, with the proviso that the transgenic plant is not *Arabidopsis*.

E4
40. An isolated nucleic acid molecule comprising an expression cassette containing a plant promoter operably linked to a heterologous *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105, SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which *ADC* nucleic acid encodes a polypeptide that modulates seed mass or oil content.

E5
45. A method of modulating seed oil content in a plant, the method comprising:
providing a first plant comprising a recombinant expression cassette containing an *ADC* nucleic acid linked to a plant promoter, which *ADC* nucleic acid comprises a nucleic acid sequence at least about 80% identical to a nucleic acid sequence selected from a group consisting of SEQ ID NO:100, SEQ ID NO:101, SEQ ID NO:102, SEQ ID NO:103, SEQ ID NO:104, SEQ ID NO:105,

SEQ ID NO:106, SEQ ID NO:107, SEQ ID NO:108, SEQ ID NO:109, SEQ ID NO:110, and SEQ ID NO:111, and which ADC nucleic acid encodes a polypeptide that modulates seed mass or oil content;

selfing the first plant or crossing the first plant with a second plant, thereby producing a plurality of seeds; and

selecting seed with altered oil content.

46. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:3.
47. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:100.
48. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:101.
49. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:102.
50. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:103.
51. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:104.
52. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:105.
53. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:106.
54. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:107.
55. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:108.
56. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:109.
57. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:110.
58. The method of claim 1, wherein the ADC nucleic acid is SEQ ID NO:111.

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72. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:3.
 73. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:100.
 74. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:101.
 75. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:102.
 76. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:103.
 77. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:104.
 78. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:105.
 79. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:106.
 80. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:107.
 81. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:108.
 82. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:109.
 83. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:110.

- El6
cont'd
- NO:3.
- NO:100.
- NO:101.
- NO:102.
- NO:103.
- NO:104.
- NO:105.
- NO:106.
- NO:107.
- NO:108.
- NO:109.
- NO:110.
- NO:111.
- ID NO:100.
- ID NO:101.
84. The seed of claim 24, wherein the ADC nucleic acid is SEQ ID NO:111.
85. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
86. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
87. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
88. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
89. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
90. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
91. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
92. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
93. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
94. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
95. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
96. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
97. The transgenic plant of claim 35, wherein the ADC nucleic acid is SEQ ID
98. The isolated nucleic acid of claim 40, wherein the ADC nucleic acid is SEQ
99. The isolated nucleic acid of claim 40, wherein the ADC nucleic acid is SEQ